SOLA

USER GUIDE

ups 620 Rackmount

1000 VA, 1500 VA, 2000 VA and 3000 VA

A Best Power Company

UNINTERRUPTIBLE POWER SYSTEMS

Important Notice

The UPS ground (earth) conductor carries leakage current from the loads in addition to any leakage current generated by the UPS. This UPS generates no more than 1 mA of current. To limit the total leakage current to 3.5 mA, the load leakage must be limited to 2.5 mA. The three-wire receptacle that you plug the UPS into must have a good (low-impedance) ground (protective earth) connection to provide a safe path for leakage current.

SOLA

ups 620®
Rackmount

1000 VA, 1500 VA, 2000 VA and 3000 VA

User Guide

STM-0303A

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UNINTERRUPTIBLE POWER SYSTEMS

If You Have a Question

Customer Support

If you have a question or problem, Table 3, Troubleshooting, may help. If you need more help, **please have your UPS model number and serial number (on the back label) nearby, and call the SOLA office nearest you (see the SOLA offices section).** SOLA's service technicians have in-depth knowledge of the UPS and power problems.

SOLA may tell you the UPS must be returned. If this happens, we will give you a Return Authorisation (RA) number. **When you return a SOLA 620 Rackmount to the factory for any reason, please use the original packing material in which your unit was shipped to you. You may be responsible for repair charges for damaged units which are not packed in SOLA packing material.** If you have discarded the original packing material, please call the nearest SOLA office so that we can ship new packing material to you. If you have any questions, please feel free to call or fax the nearest SOLA office. Please do not return your SOLA 620 Rackmount without calling SOLA first. SOLA will advise you where to ship your SOLA 620 Rackmount.

SOLA reserves the right to change specifications without prior notice.

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Trademarks

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Safety Instructions

IMPORTANT SAFETY INSTRUCTIONS! SAVE THESE INSTRUCTIONS!

This User Guide contains important instructions for your Sola 620 Rackmount that must be followed during installation and maintenance of the UPS and batteries.

CAUTION!

Whenever the Sola 620 Rackmount is "On," there may be dangerous voltage present at the unit's outlets. This is true because the unit's battery supplies power even if the unit is not plugged into the wall outlet. The unit contains dangerous voltages.

To reduce the risk of electric shock, install in a temperature-controlled and humidity-controlled indoor area free of conductive contaminants.

The power supply cord is intended to serve as the disconnect device. The socket-outlet shall be near the equipment and shall be easily accessible.

With the exception of the user-replaceable batteries, all servicing of this equipment must be performed by qualified service personnel.

Before maintenance or repair, all connections must be removed. Before maintenance, repair or shipment, the unit must be completely switched off and unplugged or disconnected.

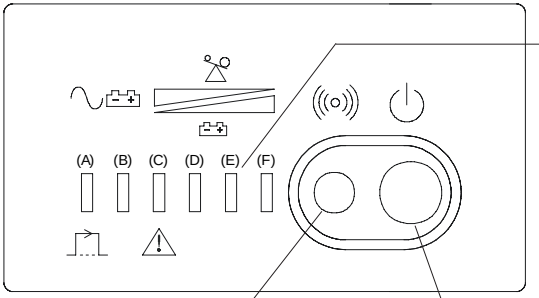
The installation and use of this product must comply with all national, federal, state, municipal or local codes that apply. For assistance, call SOLA Service or your local SOLA office.

If the Sola 620 Rackmount unit has been damaged during shipment, call your vendor immediately.

If the Sola 620 Rackmount unit is stored, the batteries should be recharged every 6 months. *If stored above 25° Celsius, recharge the batteries more often.*

UPS Features

The Sola 620 Rackmount provides protection against power problems, including power outages, brownouts, and sudden increases in power. It also provides spike suppression and line noise filtering to protect your equipment. Front panel LEDs and an audible alarm keep you aware of the unit's status. Use the drawings on this and the following page to identify features of the unit.



Status/Alarm LEDs
A: Line/Bypass
B: Battery Mode
C – F: % Load or Battery Charge
(see page 9)

Alarm Silence/
Battery Test Button

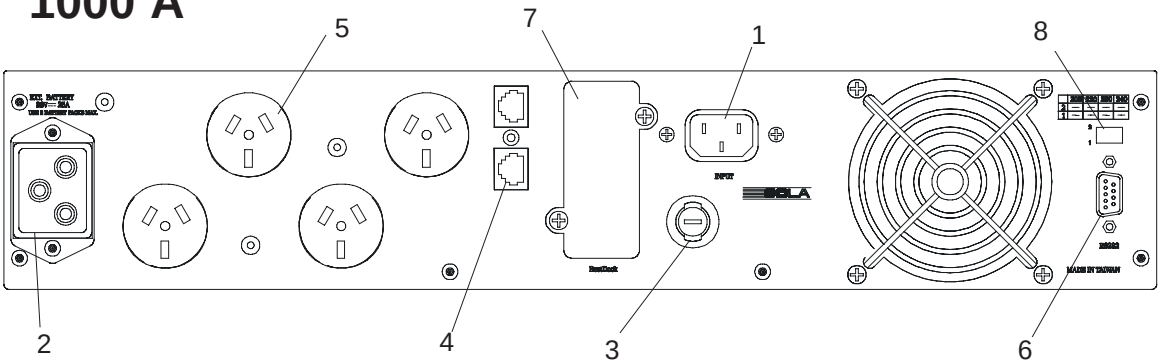
On/Standby
Button

Sola 620 Rackmount
Controls and Indicators

Back Panel Details

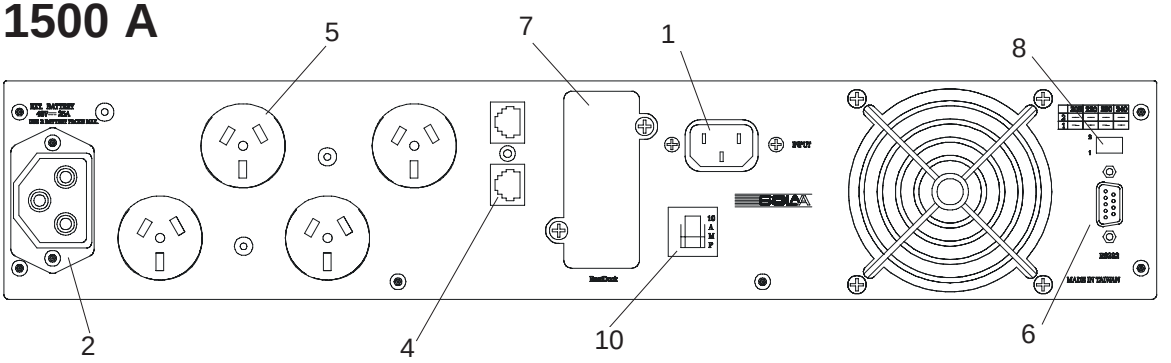
1. Input Power Connector or
2. External Battery Connector
3. Fuse
4. RJ45 Jacks
5. Aust 10A Outlets
6. Interface Port
7. BestDock Access Panel
8. Voltage Selection Switches
9. External Battery Connectors
10. Circuit Breaker
11. Aust 15A Outlets

1000 A

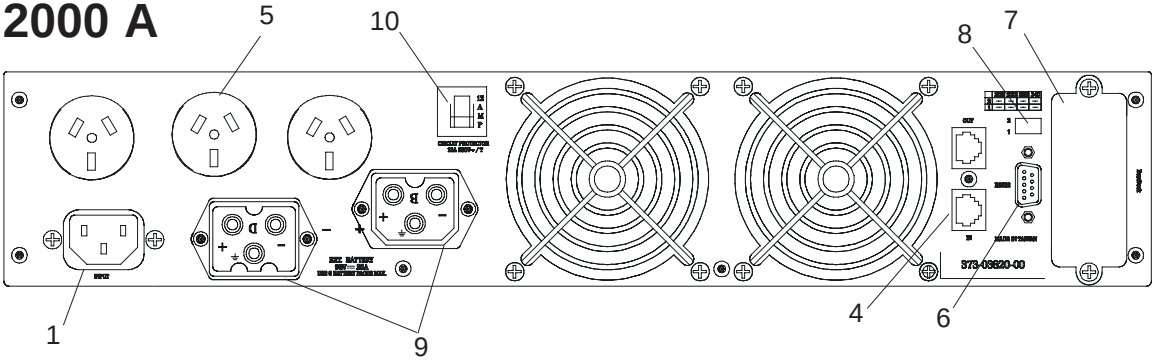


Sola 620 Rackmount Back Panel Views

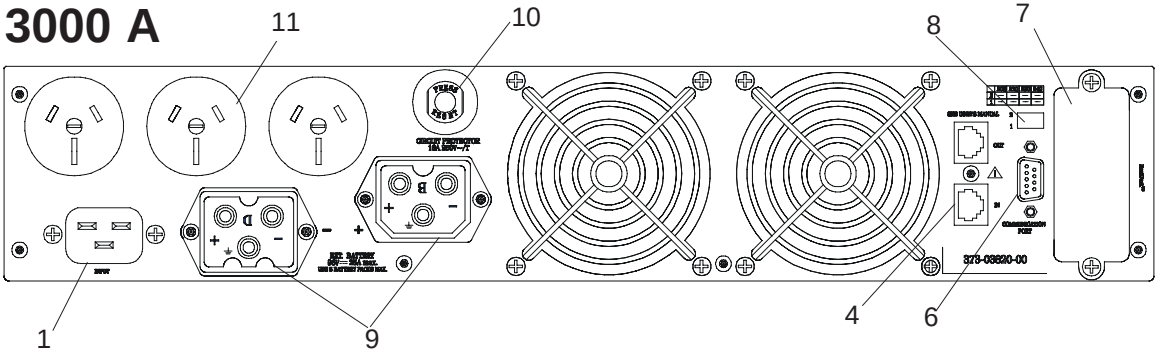
1500 A



2000 A



3000 A



Back Panel Details

1. Input Power Connector
2. External Battery Connector
3. Fuse
4. RJ45 Jacks
5. Aust 10A Outlets
6. Interface Port
7. BestDock Access Panel
8. Voltage Selection Switches
9. External Battery Connectors
10. Circuit Breaker
11. Aust 15A Outlets

Rack Installation

Mount the Sola 620 Rackmount in a 19-inch (483-mm) EIA 310 C standard rack.

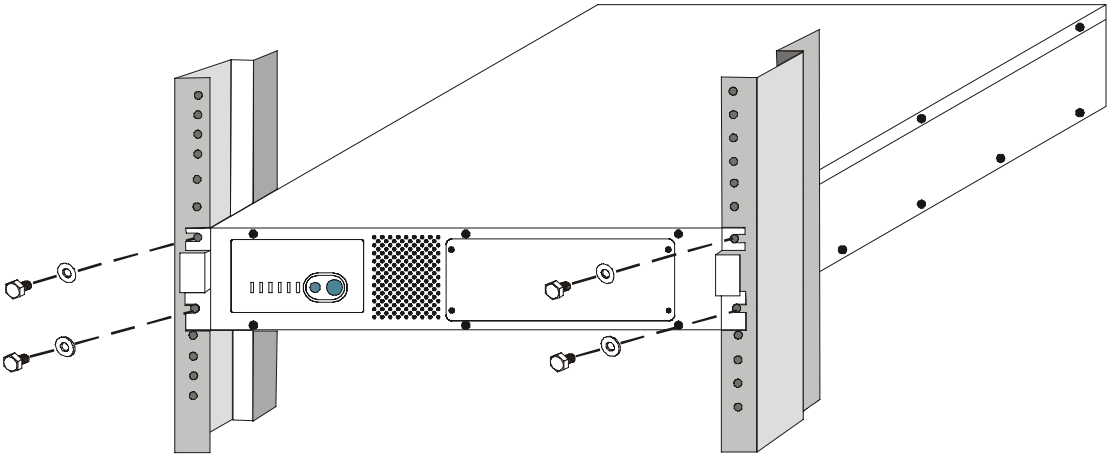
Do not try to mount the unit if the rack is too wide.

Do not rely on the front mountings only to support the weight of the unit.

Install a stationary shelf or supporting angle brackets (available as standard rack hardware from electronics distributors) below the intended rack location for the Sola 620 Rackmount. Secure the shelf or brackets at both the front and back of the rack using bolts, nuts, and washers.

Carefully lift the unit onto the shelf or brackets and slide it into the rack as shown below. The mounting holes on the sides of the front panel should match the holes in the rack.

Use bolts and washers to attach the unit securely to the rack.



Wall Installation

The Sola 620 Rackmount is shipped with screws and brackets to mount it to a wall surface. You must attach one bracket to each side of the UPS, and then mount the UPS to the wall. Install the UPS by following the instructions below. **NOTE: The procedure requires two people.**

1 Note that the brackets (items 1 and 2 in the drawing) are not identical. They must be attached to the Sola 620 Rackmount so that the narrow side of key slots is up, as shown in the drawing below.

2 Determine the construction type of the wall to which the UPS will be mounted. Also, select the UPS position on the wall, so the brackets can be attached properly to the UPS.

3 Install one mounting bracket at a time on the Sola 620 Rackmount to avoid removing the UPS cover. Removing the cover could void the product warranty.

3.a. Remove the five screws (item 3) on the top side of the UPS that hold the UPS bottom cover in place. Align the holes of the top bracket with the cover-screw holes. Then, replace the screws to attach the bracket and secure the cover to the UPS.

3.b. Remove the five screws on the bottom side of the UPS that hold the UPS bottom cover in place. Align the holes of the bottom bracket with the cover-screw holes. Then, replace the screws to attach the bracket and secure the cover to the UPS.

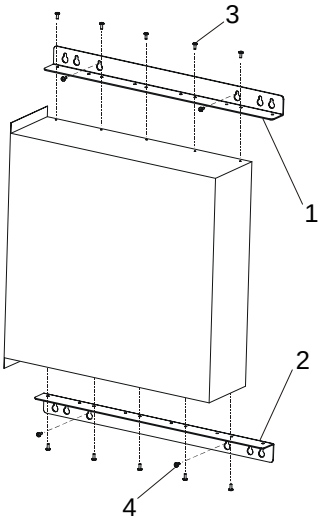
4 Based upon the wall material, select the required type of mounting screws (item 4): use wood screws for wood studs, steel stud screws for steel studs, or concrete screws for concrete or concrete blocks.

5 Mark desired screw locations on the wall and drill pilot holes for the four mounting screws: two screws for each bracket. Locate the holes to match the spacing between holes in the brackets, and **make sure that all holes are drilled into structural material.**

6 Partially screw all four screws into the wall, leaving enough length exposed to position the UPS onto the screws.

7 With someone helping you, lift the UPS onto the screws and lower it until the screws are in the key slots of brackets.

8 Tighten all four mounting screws to hold the SOLA 620 Rackmount securely to the wall.



1. Top Bracket
2. Bottom Bracket
3. UPS Cover Screws (10)
4. Wall Mounting Screws (4)

Connection to External Battery Packs

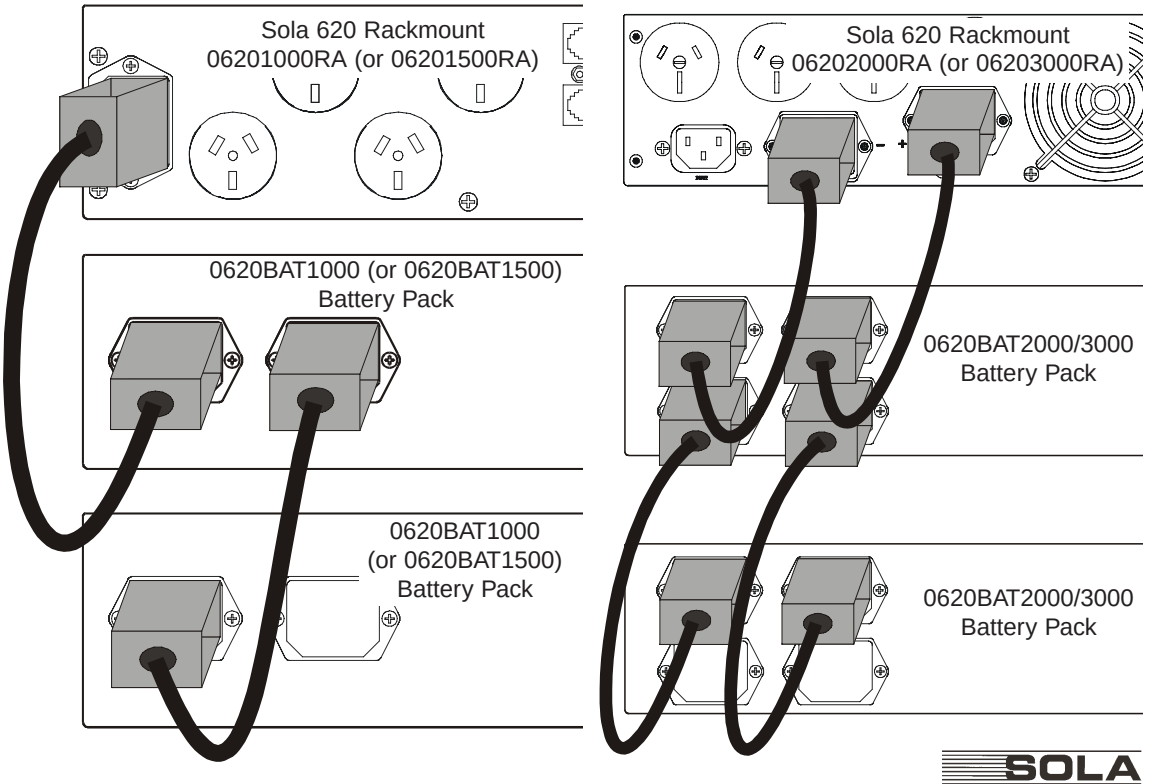
Before connecting the input power cord, connect all intended battery packs to the Sola 620 Rackmount by following the guidelines below.

The battery packs for 1000 and 1500 VA units may be linked serially (daisy-chained) to a maximum of two packs. The battery packs for 2000 and 3000 VA units may be daisy-chained to a maximum of five packs. Do not exceed these limits.

The receptacles on each battery pack, and each UPS are unique, to prevent the wrong battery packs from being connected to a Sola 620 Rackmount. Make sure that battery cable connectors match the receptacles on the UPS and the battery pack.

Turn off the circuit breaker of all battery packs before connecting the cables.

After connecting all battery pack cables as shown in the example drawings below, turn on the circuit breakers.



Quick Startup

1 Connect the power cord to the back of the unit. Plug the UPS into a wall outlet.

2 Let the unit charge the battery for at least 8 hours. You may use the unit while the battery charges, but the battery backup runtime will be reduced until the battery is fully charged.

3 Start the Sola 620 Rackmount by pressing and holding the On/Standby button (large button in the center of the front panel) in for about one second. Note: To turn the unit either on or off, the On/Standby button must be pressed for about one second.

3.a. When it starts, the unit beeps and lights the front panel lights, turns them off and lights them again. **Next, the Sola 620 Rackmount applies AC output to the back panel receptacles.** It does a brief self test, turning various front panel lights off and on.

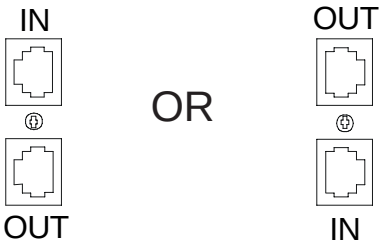
3.b. After 30 seconds or less, the self test is complete. The top and bottom green lights will come on and remain on. If the unit beeps, or if the top light does not remain on even though input power is available from the wall outlet, go to the Troubleshooting section.

4 Switch off the equipment you want to protect, and plug each load into an outlet on the back of the Sola 620 Rackmount.

5 Switch on the protected equipment, one load at a time. If the UPS beeps an alarm when you start your equipment, the UPS may be overloaded. See the Troubleshooting section.

The bottom four lights on the front of the UPS show the % of the UPS load capacity that your equipment is using. See Symbols, LEDs and Audible Alarms Section for more information.

6 The RJ-45 Surge Protection jacks will protect network equipment that uses an RJ-45 connection. Plug the 10BASE-T or 100Base-T network connection into the surge protection jack labeled “IN” on the back of the Sola 620 Rackmount. Plug the protected equipment into the surge protection jack labeled “OUT.” Network cabling is not provided. *This connection is optional. It is not needed to use the Sola 620 Rackmount.*



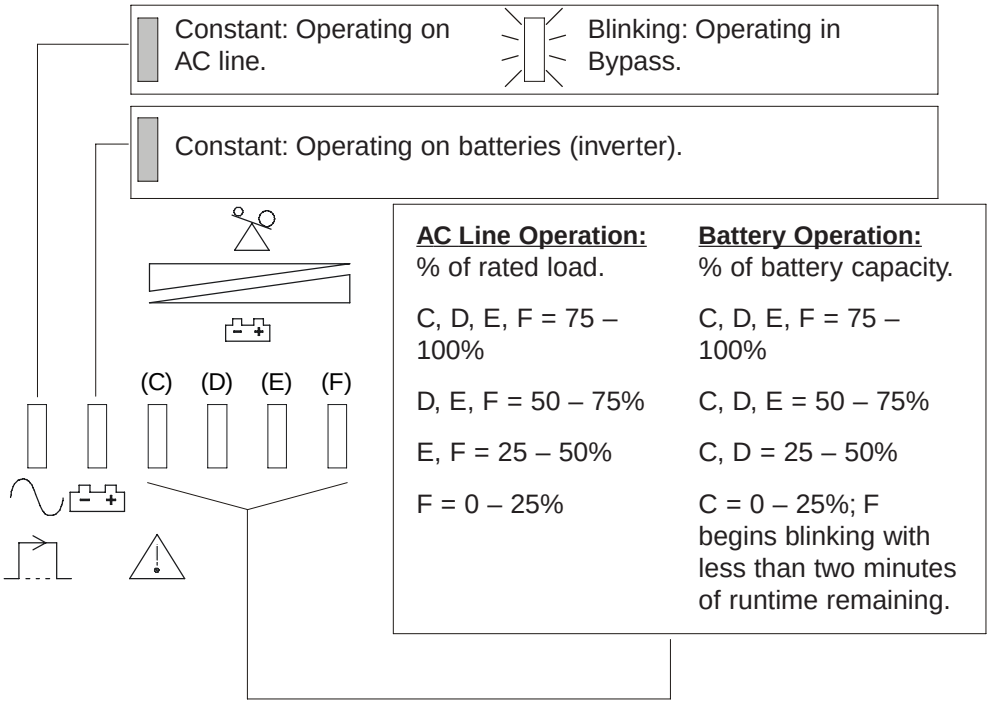
RJ-45 Jacks

7 Please fill out the warranty registration card and return it to your local SOLA office.

Symbols, LEDs and Audible Alarms

The front panel indicators (LEDs) and an audible beep indicate the unit status. The unit beeps whenever the unit is on battery power or an alarm exists. See Figure 1 for information about the LEDs and Table 1 for information about alarm displays.

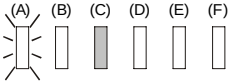
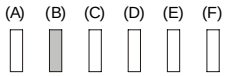
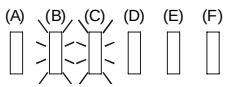
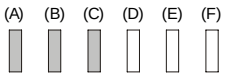
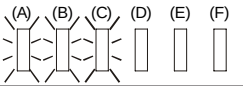
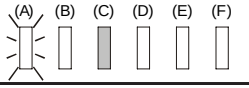
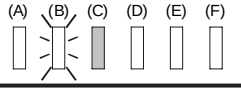
Figure 1: Front Panel LEDs


Constant: Operating on AC line.
Blinking: Operating in Bypass.
Constant: Operating on batteries (inverter).
(C)
(D)
(E)
(F)
AC Line Operation:
% of rated load.
C, D, E, F = 75 – 100%
D, E, F = 50 – 75%
E, F = 25 – 50%
F = 0 – 25%
Battery Operation:
% of battery capacity.
C, D, E, F = 75 – 100%
C, D, E = 50 – 75%
C, D = 25 – 50%
C = 0 – 25%; F begins blinking with less than two minutes of runtime remaining.

An Alarm condition exists when LED (C) is blinking or when an audible beep is sounding.

The alarm display in the left column of Table 1 shows several things: it shows the number of beeps per time period (for example, 3 beeps every 5 seconds), or a constant beep or no beeps, and the LED configuration. LEDs are shown as being off (no shading), on (shaded), or blinking (radiating lines).

Table 1: Alarm Conditions

Alarm Display	Alarm Description	What You Should Do
2 beeps per second. 	The UPS is overloaded (in Line Mode). Your equipment needs more power than the UPS can supply. The UPS is operating in Bypass.	Shut off the least important equipment connected to the UPS. If this solves the overload problem, the UPS will switch from bypass back to normal operation.
2 beeps per second.	The UPS is overloaded (in Battery Mode). Your equipment needs more power than the UPS can supply.	Shut off the least important equipment connected to the UPS. Restart the unit by turning it off and on again.
No beep. 	The UPS is performing a battery test.	No action needed. The UPS returns to normal operation when it successfully completes the battery test.
Continuous beep.	Battery test has determined the batteries are overcharged.	Turn off protected loads. Turn off the UPS and phone SOLA Service.
3 beeps every 5 seconds. 	Battery test has determined the batteries should be replaced.	Phone SOLA Service.
Continuous beep. 	High internal temperature.	Make sure the unit's fans and vent holes are not blocked, and the ambient temperature is not above 40 degrees C (104 ºF). If these conditions do not exist, phone SOLA Service.
Continuous beep. 	High output voltage or inverter short circuit.	Phone SOLA Service.
2 beeps per second.	High internal DC bus voltage.	Phone SOLA Service.
Continuous beep. 	Short circuit in the bypass static transfer switch.	Phone SOLA Service.
Continuous beep. 	Short circuit in the inverter static transfer switch.	Phone SOLA Service.

To silence an alarm, press the alarm silence button on the front panel. The beep will stop, but the alarm light will stay on. Note: Silencing the alarm does not solve the problem that caused it. To correct the problem, see Tables 2 and 3.

Table 2: Audible Beeps

Number of Beeps	What It Means
1 every 5 seconds	***Line Loss:*** The unit is on battery power. See Table 3 for more information.
2 every 5 seconds	***Low Battery Alarm:*** The unit was running on battery power and shut down due to very low battery voltage. The unit will restart automatically when acceptable power returns.
3 every 5 seconds	***Replace the Battery:*** The battery needs to be replaced. See "Replacing the Batteries."
3 every 5 minutes	***Battery is charging:*** The battery is being charged and will not deliver full runtime.
2 beeps every second	***Output Overload:*** Too much load equipment. Turn off or disconnect one or more pieces of protected equipment.
Continuous	***UPS Fault*** or ***Site Wiring Fault:*** UPS internal failure or error in building power outlet.

BestDock™

The Sola 620 Rackmount BestDock communication slot accepts optional communication cards, like the internal BestLink SNMP/WEB adapter. The insertion of a card into the BestDock communication slot replaces the normal communication channel from the Sola 620 Rackmount interface port. The interface port becomes the connection point for configuring the card in the BestDock.

Troubleshooting

If you have a question or problem, the troubleshooting table may help. (See Table 3.) If you need assistance, phone SOLA Service or your local SOLA office. Please have the model number and serial number (located on the rear of the unit) available.

If the unit must be returned, SOLA will give you a Return Authorisation (RA) number. Phone SOLA for an RA number before returning the unit for any reason.

Table 3: Troubleshooting

Problem	Possible Reasons	What To Do
Green LINE LED is not on even though AC line input seems to be available, and the UPS beeps every few seconds.	1. No input power may be available to the UPS. 2. The input circuit breaker (or fuse) on the back of the UPS has been tripped (or opened).	1. Make certain the UPS is plugged into a receptacle with power applied. 2. Reset the breaker (or replace the fuse) and restart the UPS.
The UPS operates normally but some or all of the protected loads will not operate.	1. The loads are not connected to the UPS. 2. If the output receptacle has a circuit breaker, it has been tripped.	1. Make certain the loads are plugged into the receptacles of the UPS. 2. Reset the circuit breaker for the receptacle by pressing the button or resetting the switch.
The amount of time that the UPS can run on batteries is less than the rated time.	The battery may not be fully charged, it may be faulty, or the charger may have failed.	Recharge the battery for at least 10 hours by connecting the UPS to a source of AC line input. Then retest the battery backup time. If the problem has not been solved by recharging the batteries, phone SOLA Service.

Replacing the Batteries (1000VA and 1500VA only)

The Sola 620 Rackmount batteries are user-replaceable and can be replaced while the Sola 620 Rackmount has AC input applied and powers the loads (hot-swappable). This means that, if necessary, you can replace the batteries while the UPS is running. Before you replace the batteries, make sure that you read the safety information below.

Note: If you have a power outage while you are replacing the batteries, the UPS will not be able to run on battery power and your protected equipment will shut down.

CAUTION!

The batteries used in the UPS and battery pack can produce dangerous voltage and high current. Therefore, the batteries may cause severe injury if their terminals contact a tool or the UPS cabinet. Be very careful to avoid electrical shock and burns from contacting terminals while you replace the batteries.

Batteries contain caustic acids and toxic materials and can rupture or leak if mistreated. Remove rings and metal wristwatches or other jewelry. Do not carry metal objects in your pockets: these objects could fall into the UPS.

Never allow any tool to contact both a battery terminal and the UPS cabinet or another battery terminal. Do not lay tools or metal parts on top of batteries.

To ensure continued superior performance of your UPS and to maintain proper charger operation, you must replace the UPS batteries with the same number and type of batteries. These batteries must be the same type as the original batteries: valve-regulated, low maintenance. The replacement batteries should have the same voltage and ampere-hour rating as the original batteries.

Assume that old batteries are fully charged. Use the same precautions you would use when handling a new battery. Do not short battery terminals with a cable or tool! Batteries contain lead. Many areas have regulations about disposing of used batteries. Please dispose of old batteries properly. DO NOT dispose of batteries in a fire because the batteries could explode. Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.

This equipment may produce ozone. Take precautions to ensure that the concentration of ozone is limited to a safe value (0.1 ppm {0.2 mg / m^3} calculated as an 8-hour time-weighted average).

Battery Replacement Instructions (1000VA and 1500VA only)

1. Phone SOLA Service to order a replacement battery pack. It must be the same type and rating of the original batteries. See *Battery* information in Specifications.

2. If it is necessary, the batteries may be replaced while the Sola 620 Rackmount is running, with the protected equipment attached. **Option:** You may switch off and unplug the protected load equipment from the Sola 620 Rackmount. Then, turn off the Sola 620 Rackmount and disconnect the line cord.

3. Use the drawing below to identify the location on the battey pack in the Sola 620 Rackmount.

4. Remove the screws holding the exterior battery access panel (1) to the front panel. Set the screws and panel aside.

5. Remove the screw holding the interior panel (2) to the battery chamber. Use care to avoid dropping screw inside the unit. Set the screw and panel aside.

6. Unplug the battery connector from its mating socket.

7. Pull the tray of batteries from the Sola 620 Rackmount. Do not pull batteries out by pulling on battery terminals or cables. The 1000VA unit has three batteries on its tray; the 1500VA unit has four batteries.

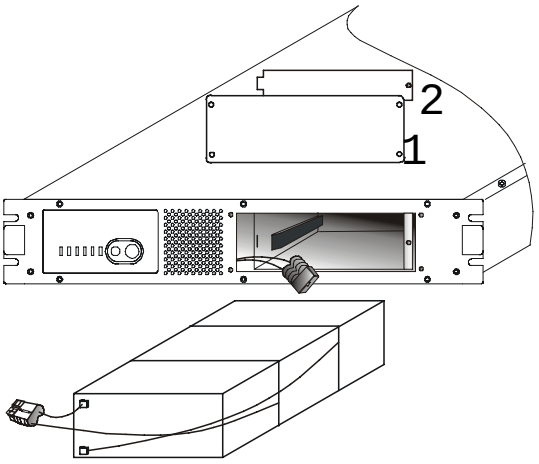
8. Position the new battery tray and its cables so they will not be pinched by the interior panel or the battery pack. Slide the battery pack into the unit.

9. Reconnect the cable to the new battery pack.

10. Use the screws removed earlier to re-install the interior panel to the battery chamber and the exterior panel to the front panel.

11. **If you followed the option in step 2:** Reconnect the line cord to the Sola 620 Rackmount and turn the unit on.

12. Reconnect the load equipment. Switch on the protected load equipment one piece at a time.



Interface Port

The Sola 620 Rackmount comes equipped with CheckUPS II power management software. Instructions included with the CheckUPS II CD tell you how to install the software. An interface cable for the following systems is provided.

SCO UNIX/XENIX	UNIX and Compatible Systems	OS/2
Windows 3.X, 95 and NT	Novell NetWare	

SOLA offers interface kits that allow you to connect many other computer systems to the Sola 620 Rackmount interface port. For the following computer systems, or specific information on SOLA interface kits, call SOLA Service or your local SOLA dealer.

Banyan VINES	IBM RS/6000 AIX	IBM AS/400 special
Lantastic v4.0	LAN Manager/Server v2.0	

Interface Port Pinouts

Pin 1 ***RS232 Receive Data:*** Receives incoming RS232 communication data.

Pin 2 ***RS232 Transmit Data:*** Sends outgoing RS232 communication data.

Pin 3 ***Normally Open On-Battery Contact:*** A normally open contact that closes 15 seconds (pulls to Common) after the UPS switches to battery power.

Pin 4 ***Common:*** The signal ground for all signal pins.

Pin 5 ***Normally Open Low-Battery-Alarm Contact:*** A normally open contact that closes (pulls to Common) during a Low Battery Alarm. This tells CheckUPS II and other shutdown software when to start a computer shutdown.

Pin 6 ***Reserved.***

Pin 7 ***Remote Shutdown:*** Shorting this pin to common for at least 5 seconds, while the UPS is operating on battery, shuts the UPS off after 120 seconds. NOTE: The shutdown sequence must continue even if AC line returns during the 120 second countdown.

Pin 8 ***Normally Closed On-Battery Contact:*** A normally closed contact that opens 15 seconds (releases from Common) after the UPS switches to battery power.

Pin 9 ***Normally open bypass switch status contact.*** A normally open contact that closes (pulls to common) whenever the UPS is in an Internal Bypass mode or is being bypassed through the use of a bypass switch.

Contacts consist of open collector circuits capable of switching up to +30 VDC, 6 mA resistive load. The internal pull-up voltage on pins 3, 5, 8, and 9 is +12 VDC.

An Emergency Power Off (EPO) function is available through the interface port. Contact SOLA for specific technical details.

Specifications

SOLA reserves the right to change specifications without prior notice.

Line Transient Protection: Passes ANSI/IEEE C62.41 Category A testing.

Safety Compliance: Designed to meet AS 3260, IEC 950.

EMC Compliance: AS 3548; CISPR 22 Class B, Vfg 243-91/46-92 B, EN55022, CE Mark
Self-certified to: CE Marking Directive 93/68/EEC, Low Voltage Directive 73/23/EEC;
C-tick marked.

Noise (RF) Suppression: Full-time EMI/RFI filtering.

Efficiency: > 87% on-line operation (full load; fully charged, at least 50% load).

Capacity VA/Watts: 1000VA / 700W; 1500VA / 1050W; 2000VA / 1400W; 3000VA / 2100W

Voltage Nominal: 240 VAC

Input Voltage Range: 160 to 276 VAC for normal operation, 0 to 300 VAC absolute.

Input Frequency: 50/60 Hz auto-sensing 55 - 65 Hz (60 Hz); 45 - 55 Hz (50 Hz); tolerance adjustable as described in Appendix A.

Output Frequency: Tracks input frequency up to preset limits (refer to Appendix A)
50/60 Hz ± 0.5 Hz, free running, on battery.

Typical Runtime (minutes): *1000VA:* Full load: 9 minutes. Half load: 24 minutes.
1500VA: Full load: 7 minutes. Half load: 23 minutes.
2000VA (with 1 external battery): Full load: 14 minutes. Half load: 36 minutes.
3000VA (with 1 external battery): Full load: 7 minutes. Half load: 21 minutes.

Transfer Time to Bypass: 0-4 ms.

Battery: Sealed, maintenance-free, valve-regulated, UL 924 recognized.

1000 VA:	Three 12-V, 9 AH batteries. Nominal Voltage is 36 VDC.
1500 VA:	Four 12-V, 9 AH batteries. Nominal Voltage is 48 VDC.
2000 VA and 3000 VA:	External battery pack provides 96 VDC nominal voltage.

Automatic Battery Test: Automatic battery test occurs upon startup and every 14 days thereafter. Alarm will sound if the battery fails this test.

Battery Recharge Time (to 95% of capacity): *All Models:* 8 hours

Overcurrent Protection (on line): *All Models:* Fuse

Input Fault Current (maximum): *1000 and 1500 Models:* 15 A
2000 Model: 26.1 A.
3000 Models: 35 A.

AC input Plug/Cord Information:

1000 Model:	IEC 320 C14 recessed plug.
1500 Model:	IEC 320 C14 recessed plug.
2000 Model:	IEC 320 C14 recessed plug.
3000 Model:	IEC 320 CE20 recessed plug.

AC Output Distribution:

1000 Model:	four Australian 10 ampere receptacles
1500 Model:	four Australian 10 ampere receptacles
2000 Model:	three Australian 10 ampere receptacles
3000 Model:	three Australian 15 ampere receptacles

Load Compatibility: Power factor corrected switch mode power supply loads can be supported up to 100% of full UPS watt rating.

Audible Noise: < 45 dBA at one metre, except 2000 and 3000 VA models which are < 52 dBA at one metre.

Ventilation: Air around the unit must be free of dust, chemicals, or other materials that corrode or contaminate. Air must be free to move around the unit.

Operating Temperature: 0° - 40° C.

Storage Temperature: -15° to +50° C. Battery life is reduced above 25 ° C.

If the Sola 620 Rackmount unit is stored, the batteries should be recharged every 6 months.
If stored above 25° C, recharge the batteries more often.

Humidity: 0% - 95% RH (non-condensing).

Altitude: 3000m maximum

Dimensions (Height x Width x Depth): *All Models and External Battery Packs: 85.2 x 483 x 490mm*

Weight:	*1000 Model:*	18.5 kg	*2000 Model:*	11.0 kg
	1500 Model:	21.5 kg	*3000 Model:*	11.0 kg
	BAT1000:	23.5 kg	*all other external battery packs:*	28.5 kg

Warranty

Warranty Information

This Warranty is subject to Sola's standard Conditions of Sale which govern all sales of products by Sola Australia Ltd.

1. SOLA products, in general, are warranted against failure due to faulty materials and/or workmanship for a period of two years from despatch date (ex Sola store) as per invoice. The Ferroresonant and 95 Series Power Conditioners and SOLA Dry Type Transformers have an extended warranty – 5 years from date of despatch.

2. If, within the applicable Warranty period, any Sola product does not meet the warranty specified above, and the product was installed and operated in accordance with Australian standards and Sola standard installation procedures, Sola shall thereupon correct any defects due to faulty materials and/or workmanship.

3. Any modification made to the product other than those made by Sola or its authorised representative may cause the Warranty to be void.

4. For units up to 3 kVA that are installed as a portable device, the Warranty covers repair or replacement of defective parts at the factory, or other service location as nominated by Sola Australia, provided the unit has been returned by the user packed adequately to prevent shipping damage, and approval has been obtained from Sola Australia Ltd before shipment. All costs associated with the return of the product to Sola Australia are at the customer's expense.

   For hardwired products 3 kVA and above, the Warranty covers on site repair (Metropolitan area, Capital Cities only), during normal working hours, by Sola technicians or appointed agents. For units installed in remote locations, Sola Australia may, at its descretion, request the equipment to be recovered and returned to the factory or other nominated service locations. In this case, it is the customer's responsibility to pack the equipment adequately to prevent shipping damages and pay freight charges to the location nominated by Sola Australia. Approval to return goods must by obtained from SOLA Australia Ltd before the goods are despatched.

5. Units returned for in-warranty repairs, which are found not to be defective, will be subject to an inspection and handling charge, plus transportation charges.

6. High grade batteries, designed for Uninterruptible Power Supply (UPS) applications, are supplied by Sola for use with Sola UPS equipment. These batteries have a finite life expectancy depending on a number of variables, including rate of discharge, depth of discharge, operating temperature, etc.

7. Providing that the batteries are used within the limits as set out in the battery manufacturer's warranty statement and are provided as an integral part of new equipment, they are guaranteed for two years, from despatch date as per invoice. A copy of this warranty statement is available on request. Batteries provided as spare parts or replacements have a one year warranty. Other optional warranty terms for batteries are available on request.

8. Sola reserves the right to charge for replacement batteries if within the one year guarantee period replacement batteries are necessary as a result of misuse or misapplication by the purchaser or end user.

Standard Warranty Registration

UPS Model Number: ..... UPS Serial Number: ..... Date of Purchase: ...../...../.....

Contact Person: .....

Company/Organisation: .....

Address: .....

City: ..... State: ..... Country: ..... Postcode: .....

Telephone: ..... Fax: ..... E-mail: .....

1. Where did you purchase this SOLA UPS from?
   ❑Retail Store ❑Computer Store ❑SOLA Distributor ❑Direct from SOLA
   ❑Electrical Wholesaler ❑Mail Order Catalogue ❑Internet ❑Other .....
2. Why did you purchase a SOLA UPS? (Check all that apply)
   ❑Recommendation ❑Reputation ❑After Purchase Support ❑Features
   ❑Price ❑Other .....
3. What price did you pay for this SOLA UPS? .....
4. What features of a UPS are important to you?
   ❑Appearance ❑Front Panel Display ❑Backup Time ❑RS232
   Communications ❑UPS Management Software ❑Other .....
5. What equipment do you intend to protect with this SOLA UPS?
   ❑Personal Computer(s) ❑Workstation(s) ❑Service/Network Equip.
   ❑Midrange Computer(s) ❑Mainframe(s) ❑Industrial Automation
   ❑Telecommunications Equipment ❑Retail/Point-of-Sale Equipment ❑Facilities/
   Building wide protection ❑Other .....
6. Please specify the equipment being protected by your SOLA UPS?
   Brand.....Model ..... Operating System .....
7. How would you classify your type of business?
   ❑Retail ❑Wholesale/Distribution ❑Manufacturing ❑Telecommunications
   ❑Government/Eduction ❑Banking/Finance ❑Restaurant/Hotel ❑Other .....
8. What is your company's annual revenue?
   ❑Less than $1m ❑$1m-5$m ❑$5m-$20m ❑$20m-$100m ❑Greater than $100m
9. Approximately how many personal computers are there in your company?
   ❑Less than 10 ❑10-20 ❑20-50 ❑50-200 ❑Greater than 200
10. Do you plan to purchase more UPS or Power Protection products?
    ❑ Within 1 month ❑1-6 months ❑6-12 months ❑Unlikely
11. Would you like information about SOLA Extended Warranty and Fastfix Exchange programs?
    ❑Yes ❑No
12. Would you like to be kept informed about new SOLA product developments and be added to our customer service database?
    ❑Yes (you will receive mail from SOLA at least three (3) times per year) ❑No

AFFIX
POSTAGE
STAMP

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DANDENONG VIC 3175
AUSTRALIA

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Fax: 08-9479-4577

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67A Ryedale Road
West Ryde NSW 2093
Phone: 02-9949-6000
Fax: 02-9907-9802

Appendix A: Adjusting Input Frequency Tolerance

The Sola 620 Rackmount automatically switches to battery operation whenever the input voltage is outside an acceptable frequency tolerance. This tolerance is user selectable from the factory preset value of 50 and 60 Hz, ±5%, to ±7%, and to ±2%.

You can use the Alarm Silence/Battery Test button to change the tolerance (while the UPS is operating on AC input power) by following these steps:

1. Press and hold the Alarm Silence/Battery Test button for 10 seconds. When the UPS beeps twice, two LEDs illuminate to display the current frequency tolerance selection: LEDs 1 and 6 indicate ±7%; LEDs 2 and 5 indicate ±5%; and LEDs 3 and 4 indicate ±2%.

2. Press the Alarm Silence/Battery Test button for 1 second to advance through the various selections, until the LEDs indicate the desired frequency tolerance.

3. When the desired LED display is illuminated as shown in the drawing below, press and hold the Alarm Silence/Battery Test button for 10 seconds. When the UPS beeps once and the LED pattern changes, the UPS has stored the new frequency tolerance selection and has returned to normal operation.

4. If you do not store a new selection as described in Step 3, after 10 seconds the frequency tolerance automatically resets to the default value of ±5% and the UPS returns to normal operation.